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MASTER OF MILITARY STUDIES

**Improvised Explosive Device Detector Dogs (IDDs):  
Is the USMC barking up the wrong tree?**

SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF MILITARY STUDIES

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## *Executive Summary*

**Title:** Improvised Explosive Device Detector Dogs (IDDs): Is the USMC barking up the wrong tree?

**Author:** Major Robert M. Storck, United States Marine Corps

**Thesis:** Although there are areas needing improvement, the controversial IDD program should become a program of record (POR). Since countering IEDs is an enduring requirement and dogs working off leash provide significant stand-off detection capability.

**Discussion:** Operation Iraqi Freedom (OIF) ended in December 2011 and Operation Enduring Freedom (OEF) will soon conclude as well. However, the use of IEDs will remain a hallmark tactic, technique and procedure (TTP) of insurgents, which will make IDD relevant for future wars. The IDD concept is solid, but the program needs improvement. After action reports (AARs) from units with IDDs consistently identified four problem areas that could hinder the IDDs sustainability in the Marine Corps. First, the Labrador Retrievers are producing substandard results. Could a different breed, such as, Belgium Malinois (Mal-in-wa) meet the infantry Marines expectations? The second and third problem areas concern IDD handler selection and battalion education. Lastly, there are problems regarding homemade explosive (HME) odor imprinting; dogs deployed to theater are not able to detect HME. The USMC needs to improve the aforementioned areas to ensure the programs longevity. In the past, the military discarded some innovative programs developed to counter enemy TTPs, this mistake cannot be made with the IDD program post OIF and OEF.

**Conclusion:** The IDD program is an innovative and effective concept that was proven in Iraq. However, the IDDs must adapt to the changing conditions in Afghanistan. Making the recommended changes would make the IDDs worthy of becoming a POR.

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## *Table of Contents*

	Page
DISCLAIMER.....	i
LIST OF ILLUSTRATIONS.....	iii
LIST OF TABLES.....	iv
ACKNOWLEDGEMENTS.....	v
INTRODUCTION.....	1
BACKGROUND.....	2
PROBLEM.....	3
PURPOSE.....	5
IDD DOG SELECTION.....	6
HANDLER SELECTION.....	10
BATTALION EDUCATION.....	13
SCENT IMPRINTING.....	16
CONCLUSION.....	18
WORKS CITED.....	21
BIBLIOGRAPHY.....	23

## *List of Illustrations*

IED MATERIALS.....	25
IEDs.....	26
AMERICAN IDD .....	27
BRITISH IDD.....	27

*List of Tables*

NAVAL EXPEDITIONARY DOG PROGRAM (NEDP) DEPLOYMENT CHART.....	28
IDD 1.0 PROGRAM TIMELINE.....	28
NEDP, PROBLEM TABLE.....	29

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**Lisa Albuquerque ONR (30)** - She is currently Program Manager for the Naval Expeditionary Dog S&T Program at the Office of Naval Research (ONR). Her currently funded work includes IDD 2.0, IED odor plume modeling, canine behavior modeling and a search for methods of measuring the cognitive process that follows olfaction. Her 25 years of active duty in the US Navy included both enlisted and commissioned officer service. She is a subject matter expert in the use and employment of intruder, drug and explosive detection dog teams. Ms. Albuquerque was the Principal Investigator for the Marine Corps Warfighting Laboratory IED Detector Dog (IDD) project.

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**GySgt Avendano** - He is a reservist Marine who served as a kennel supervisor for 1st Battalion, 23rd Marines while deployed to Afghanistan. His through presentation during an IDD working group meeting given in November 2011 shed light on concerns shared by many units. He has been a law enforcement working dog handler and served on the border patrol.

**Mike Herstik** – He is a dog training expert and currently works at International K9, in Los Angeles, CA. His background includes providing trained dogs and/or training for Oketz K9 unit, Israel National and Border Police, LAPD Bomb Squad and U.S. Navy Seals. Mr. Herstik and James Smith PhD coined the term “scent generalization” and developed structured generalization training protocol.

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*“I [God] endow you with the instincts uncommon to other beasts: Faithfulness, Devotion, and Understanding, surpassing those of man himself. Lest it impair your courage, you shall never foresee your death. Lest it impair your loyalty, you shall be blind to the faults of man. Lest it impair your understanding, you are denied the power of words. Speak to your master only with your mind and through your honest eyes...Guide him through the perils along the way to this land I [God] have promised him. This shall be your destiny and your immortality.”<sup>i</sup>*

*-Unknown*

## **Introduction:**

Operation Iraqi Freedom (OIF) ended in December 2011 and Operation Enduring Freedom (OEF) will soon conclude as well. However, the use of IEDs will remain a hallmark tactic, technique and procedure (TTP) of insurgents, which will make IEDs relevant for future wars. The IED concept is solid, but the program needs improvement. After action reports (AARs) from units with IEDs consistently identified four problem areas that could hinder the IEDs sustainability in the Marine Corps. First, the Labrador Retrievers are producing substandard results. Could a different breed, such as, Belgium Malinois (Mal-in-wa) meet the infantry Marines expectations? The second and third problem areas concern IED handler selection and battalion education. Lastly, there are problems regarding homemade explosive (HME) odor imprinting; dogs deployed to theater are not able to detect HME. The USMC needs to improve the aforementioned areas to ensure the programs longevity. In the past, the military discarded some innovative programs developed to counter enemy TTPs, this mistake cannot be made with the IED program post OIF and OEF. Although there are areas needing improvement, the controversial IED program should become a program of record (POR). Since

countering IEDs is an enduring requirement and dogs working off leash provide significant standoff detection capability.

### **Background:**

The use of dogs in battle is as old as warfare itself, the first records of war dogs date from about 700 B.C.<sup>ii</sup> Their purpose in battle varies as much as styles of warfare; ultimately, it is the character of the conflict that dictates the role of the war dog.<sup>iii</sup> War dogs have been used to track enemy soldiers, provide physical security, assist injured and lost soldiers, and act as messengers.<sup>iv</sup> Dogs of war were successful in nations such as Germany, Israel and the United Kingdom, but the United States was slow to develop war dog capabilities.

The lessons learned are not always carried to the next generation thus the experiences of the past are often lost, only sometimes rediscovered, but often ignored. The military working dog program is no exception. It ebbs and flows with the close of one conflict and the start of a new one.<sup>v</sup>

In the spring of 1943 during World War II, the German forces were using nonmetallic mines in Northern Africa to slow allied forces. Since mine detectors were ineffective against them, a suitable countermeasure needed to be found; which led the U.S. to develop the Mine-Dog (M-Dog) program.<sup>vi</sup> The program trained 100 dogs in less than a year and once employed in combat, the dogs quickly demonstrated the inability to find mines. Essentially, the dogs were not trained to locate buried ordnance itself but to find soil turned over by humans in the process of burying mines, but the enemy ensured they did not leave any disturbed earth that would alert the dogs. The M-dog program was discontinued in February of 1945. Decades later, experts learned dogs could be trained to detect the chemical explosives present within the mines.<sup>vii</sup>

In Vietnam the enemy used booby traps and mines, in an attempt to maim or kill allied forces. To counter such a serious problem the U.S. Army Limited Warfare Laboratory believed that new techniques and advances in training methods could result in a successful program, despite M-Dog failures in WWII.<sup>viii</sup> Vietnam would ultimately prove the dogs' usefulness with the proper training.<sup>ix</sup> However, at the end of the Vietnam War, despite a successful program, the U.S. war dogs used in Vietnam were classified as expendable equipment, the military leadership speculated that most if not all MWDs carried some type of infectious disease or could not be demilitarized, therefore they were left to the Army of the Republic of Viet Nam.<sup>x</sup> Moreover, with the designation of the U. S. Air Force as the Executive Agent for all military working dogs (MWD), the use of dogs shifted exclusively to the military police (MP) forces. As such, the breed selection and training that MWD received was adapted to best fit MP requirements.<sup>xi</sup> The M-dog program faded into the past.

Almost thirty years later, in June 2004, LtGen James Mattis requested an infantry based detector dog that could locate and indicate the presences of the explosives commonly used in improvised explosive devices (IEDs) in Iraq. This insurgent TTP is insidious and extremely lethal; but its effects can be diminished with a permanent IDD program.

**Problem:**

In August 2011, Taliban Commanders revealed that hundreds of insurgents have been trained to attack NATO forces. Iranians allegedly paid Taliban soldiers to attend a three-month course in Zahidan, just inside the Iranian border. During the second month soldiers learned how to emplace IEDs in sequence so that rescuers of soldiers wounded in first blast would be hit with secondary IEDs.<sup>xii</sup> Eight U. S. Soldiers were killed in action (KIA) on the 26<sup>th</sup> of May 2011 with this Taliban TTP. First Battalion, 5th Marines just returned in October 2011 from Sangin,

Afghanistan and endured several multiple IED attacks with mass casualties of four to nine wounded in action (WIA) and KIA during a single incident. “The Taliban are Sunni extremists and the Iranians definitely don’t want them to take control of Afghanistan again, but right now they support them as there is a bigger enemy, America. The enemy of my enemy is my friend,” said Haji Rafiq Shahir, a law professor at Herat University.<sup>xiii</sup> Because IEDs are used to surprise and ambush NATO forces, they are extremely difficult to encounter.

The National Ground Intelligence Center assesses with high confidence that each nation faces its own internal IED threat. However, many insurgent and militant IED TTPs are similar from country to country because of well-established smuggling networks. To support the Combatant Commanders’ and their respective Joint Task Forces’ efforts to defeat IEDs, the Department of Defense created the Joint IED Defeat Organization (JIEDDO), in 2006.<sup>xiv</sup> In 2011, Afghan insurgents planted 14,661 IEDs, a sixty-two percent increase over 2009 and more than three times as many as the year before. All told, 268 U.S. troops were killed by IEDs, in 2010.<sup>xv</sup> To combat this threat, JIEDDO funded a \$7.3 million, three year experiment to address the science underlying the use of dogs for remote IED detection. The Office of Naval Research (ONR) has additionally funded \$3.4 million in current and projected research in support of the USMC infantry use of dogs.<sup>xvi</sup>

To counter metal detectors, the enemy has shifted to making IEDs composed primarily of fertilizer and plastic. Even with sophisticated technology, military officials said the best method for detecting buried bombs has proved to be a dog's nose.<sup>xvii</sup> The dogs would also facilitate “stand -off” detection of the IEDs, which would help mitigate casualties if a suspected IED were to detonate during confirmation. Per, LtGen Mattis’ request, the Marine Corps Warfighting Laboratory (MCWL) funded a DoD experiment to develop the selection, conditioning, and

training protocols that would result in a dog meeting the capability requirements.<sup>xviii</sup> The programs trial was successful which resulted in the Urgent Universal Needs Statement (UUNS) from MCWL in 2007, three years after LtGen Mattis recognized and requested the dogs. An excerpt from the UUNS stated the following: “Operating forces have an immediate need to expand their organic capability to detect IEDs. MWDs have a proven ability to detect explosives rapidly and reliably. However, the number of trained dogs currently available does not allow individual companies to be routinely augmented by working dogs. Additionally, the majority of dogs available to the infantry are not capable of maintaining the infantry operational tempo of living and traveling in austere environments. Their ability to provide standoff detection capability is limited.”<sup>xix</sup> The big difference between MWD and IDD is MWDs work “on leash”.

These constraints limit the value and use of MWDs by the infantry in theater. Failure to provide this capability limits the ability of the dismounted Marine on patrol to detect IEDs. He only has visual observation at his disposal. Visual observation is dangerous since it, provides limited or no standoff and is virtually useless against well-disguised IEDs.<sup>xx</sup> The UUNS requirement for an infantry dog was validated in October 2010 when Deputy Commandant of Capabilities Development and Integration. (DC CD&I) approved the total requirement of 647 IDDs in support of OEF.<sup>xxi</sup> As of 29 December 2011, 588 IDDs are in the Marine Corps inventory, of which 225 IDDs are forward deployed to Afghanistan hunting for IEDs.<sup>xxii</sup> The training of IDDs, handlers and kennel supervisors was outsourced to reduce manpower requirements in support of the capability. This outsourcing supports rapid, adaptive changes to training protocols and methods in response to enemy countermeasures in support of Marine Corps objectives.

**Purpose:**

Operation Iraqi Freedom (OIF) concluded in December 2011, Operation Enduring Freedom (OEF) will soon end, however the insurgents' use of IEDs will remain, making IDD relevant for future wars. The failure of the military to maintain the M-dog program and doctrine post-Vietnam should not be duplicated with the IDD program post OIF and OEF. The purpose of the paper is to shed light on problems the IDD program is encountering and to provide solutions which could be implemented in order to qualify the IDDs as a POR. With continual feedback, this young program can improve, adapt, and validate its applicability as a POR. This paper will address breed selection, handler selection, battalion education, and the need for homemade explosive (HME) odor imprinting; discounting these problem areas could hinder the IDD programs' sustainability in the Marine Corps.

**IDD Dog Selection:**

"If you take a German Shepard duck hunting people will look at you funny; ensure you have the right dog for the task."

- Ralph Morten (Senior Advisor for Irregular Warfare at Cubic Applications)

The IDDs ability to provide standoff IED detection is critical to the Marines on patrol. The infantry requires an embedded explosive detector dog that is controlled by an infantry handler. The dog must be able to maintain the operational tempo of the infantry, live and work in an austere environment, and function effectively despite the sights, sounds, and smells of the war. It must be tolerant of fellow Marines, calm, and non-aggressive. It must be able to travel via all modes of transportation. The dog must perform searches at a distance from the handler since early recognition of explosives and standoff are essential capabilities. The controlled movement of the dog team must be rapid, reliable, and precise; it must support the speed and

TTPs of an infantry squad.<sup>xxiv</sup> The Marine Corps Warfighting Laboratory and Auburn University used experts from the hunt, field trial, service-assistance, and detector dog disciplines to develop the selection, conditioning and training protocols for the IDD.<sup>xxv</sup>

The IDD program manager selected the Labrador Retriever to field the IDD program, due to its kind nature, aptitude for learning, and ability to work off-leash. The American Kennel Club (AKC) has reported for the last twenty years that the Lab has been listed as the most popular breed of dog. Their aptitude to please their master drives them to excel as guide dogs, search-and-rescue dogs, and narcotics detection dogs. The dogs temperament is its hallmark: kind, outgoing, eager to please, and non-aggressive to man or animal.

Hip and elbow dysplasia are the main health concerns related to the Lab.<sup>xxvi</sup> Another concern is exercise intolerance and collapse (EIC) which has been recognized in young adult Labs. Dogs affected with EIC can tolerate mild to moderate exercise, but five to twenty minutes of strenuous exercise with extreme excitement induces weakness and then collapse. Most dogs recover quickly and are normal within five to twenty-five minutes with no residual weakness or stiffness. The ability to recover quickly differentiates this condition from a heat stroke which might take hours to days from which to recover.<sup>xxvii</sup> Currently, Labs selected for the IDD program are pre-screened via blood samples for this health issue.

After examining the AARs from deployed units, the IDDs are receiving mixed reviews in areas concerning breed choice, stamina, and temperament. Overall, the commanders realize the need for this program, but they also know the program is far from producing a finished product. The AARs indicate the IDDs are treated like moral dogs for the unit instead of CIED enablers. This breed of dog is so popular and friendly that Marines tend to treat the dogs as pets. A Company Commander told a handler from his unit that the IDD will be used his way or not at all,

instead of letting the handler determine the best way to use the IDD. In another instance, an IDD was taken from a sleeping handler and brought to the Command Operation Center and made into a pet, thereby reducing its effectiveness. Instead of a morale dog the commanders need to see the IDD as a piece of CIED equipment needed for each patrol. The perception of the IDD as a pet or mascot is the commands' problem, not the dogs'. The solution to this problem requires battalion training, or a new breed that is less likely to engender coddling.

After action reports also revealed the some Labs lacked the requisite stamina for the patrols. The high workload in some cases has worn the IDDs down and thus led to missed IEDs. Dogs lagging behind patrols cause the battalion to lose confidence in the IDD. Fatigued Labs would also ignore the handlers commands, making them unproductive. The general consensus is that the Labs are just not physically fit, which makes this potential asset a liability.

The ability for the dog to maintain pace with the infantry patrol is a requirement for the IDD. Despite conditioning and subcutaneous fluid intake the dogs are fatigued and require time to recover. The problem of fatigue could be due to EIC, overheating, or dehydration. The patrols confidence in the IDD is a deciding factor if it will join the patrol. Not having the IDD asset in this high IED threat environment increases chances of missing an IED or finding it the hard way, with Marines wounded or killed in action. More noise acclimatization training could reduce the Lab's reaction to noise, but the stamina problems are perhaps something that can be solved using a different breed.

After reading the AARs it is easy to see the room for improvement. How will the Belgium Malinois compare to the Labrador Retrievers? Replacing Labs with Belgium Malinois, could correct coddling and stamina problems, this breed has been used for decades by the Israel Defense Forces (IDF) and by the U.S Secret Service, and U.S. Navy Seals as a MWD.<sup>xxviii</sup>



Civilians and military personnel are accustomed to seeing German Shepherds working with police units. Since the German Shepherd and Belgium Malinois are similar in appearance it would be easier to treat this breed as a tool instead of a pet.

According to the AKC, the Belgium Malinois is an alert, high energy breed, popular as both a police and military working dog. The breed is confident exhibiting neither shyness nor aggressiveness in new situations. This breed possesses keen intelligence, a strong desire to work, and is responsive to commands from his owner. This breed has been used for decades by the canine Special Forces Unit of the IDF known as Oketz, developed in 1939. They prefer this breed over the German Shepherd and the Rottweiler, which were employed previously. The Belgium Malinois was chosen for its size, which allows for their handler to pick them up; and for their coats which are short and neutral to fair in color, making them less prone to heat stroke.<sup>xxix</sup>

The Belgium Malinois is intense. Some people mistakenly refer to them as Mal-a-gators since they are sometimes trained for Schutzhund.<sup>1</sup> Modern Schutzhund consists of three phases: [tracking](#), [obedience](#), and [protection](#). The image of a Belgium Malinois lunging for a padded arm is hard for some people to overcome. But one must understand, these dogs are trained in this behavior, it is not an inherent trait. Belgium Malinois work in busy places such as LAX airport where people, including kids, often touch and pet them. If these dogs were truly too aggressive, police departments would not risk citizens being bitten or attacked. Additionally, K-9 handlers in America take the dogs home for family pets, once the dogs retire.<sup>xxx</sup> The benefit of selecting this breed as an IDD outweighs the risk of aggression.

Through selective breeding health problems such as hip dysplasia have been minimized.<sup>xxxi</sup> Lackland Air force Base launched a breeding program in 2005, the only dog they breed is the Belgium Malinois. More than 125 Army, Navy, Marine Corps, and Air Force personnel train

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<sup>1</sup> Schutzhund - tests dogs of all breeds for the traits necessary for police-type work.

both dogs and handlers of all services and some Federal agencies.<sup>xxxii</sup> These dogs enjoy being challenged with new tasks, they are known as being very easy to obedience train, due to their high drive for rewards.

The IDD program needs the best dog breed to ensure the probability of IED detection. The selected IDs for IDD version 1.0 were purpose built for the Iraq mission and are experiencing capability deficiencies while working in Afghanistan.<sup>xxxiii</sup> Rather than decide which dog has the best behavior for the IDD task, we should look at the entire picture of which dog can perform better in a variety of environments. The IDD program needs to begin training these dogs and let the results speak for themselves. The dog is only half of the equation, which Marine will be chosen to be a dog handler?

### **Handler Selection:**

A successful IDD team is paramount to the safety of infantry units. Battalion leadership has the responsibility to select a Marine that is passionate about dogs and able to perform the task. The Operational Handbook endorsed by MCCDC in 2011 laid a good foundation for handler requirements, but they are not being adhered to. Battalions are under pressure to meet pre-deployment milestones and choosing a handler is not their priority; therefore many decisions regarding this issue are reactionary and short-sighted. Additionally, capabilities of this new asset are not completely understood by the commanders of the handlers, leading to misemployment.

Marines are being selected out of convenience instead of taking time to interview volunteers. The handler selection process needs to be completed 180 days prior to deployment. If volunteers are lacking the basic traits of a good Marine or the volunteer possesses a unique skillset needed elsewhere in the unit, commanders at a minimum should ensure the command selected Marines are comfortable with dogs. Previous hunt dog experience should not be a

prerequisite, but does imply the Marine has a basic understanding of dogs and reduces the amount of class time used to explain basic skills like caring for the dog and effects of wind on locating target scents.

A requirement for this program is to train an infantry Marine organic to a unit to become an IDD handler instead of assigning an outside dog team to assist in patrols. The CIED teams are a huge asset for the battalions and Marines should be carefully chosen for their maturity, initiative, and motivation. Comments from AARs indicate Marine IDD handlers are generally looked at negatively among Marines. Marines think IDD handlers are skipping out of duties when they take time to care for their IDD. If IDD handlers are not confident there is fear of retaliation from the patrol. However, Marine perceptions change once a IDD locates an IED. Unconfident Marines have been chosen to be handlers and lack communication skills or the ability to properly voice their concern, causing leaders of higher in rank to ignore request from IDD handlers with IDD related issues. The battalions are creating this problem not the IDD program framework. This problem is due to the leaderships' lack of understanding about the IDD program. The commanding officer from 1<sup>st</sup> Battalion, 5<sup>th</sup> Marines stated "If you don't know the program than you will not get the handler selection right." Early IDD training for battalion leadership needs to focus on IDD capabilities, limitations, and proper employment, which will improve the handler selection process.

The IDD handlers chosen to promote the IDD concept unfortunately ran the gambit from senior SNCOs to young LCPLs. After action reports pertaining to handler selection illustrate the importance of quality handlers. Units have found the hard way that the dog is only as good as the handler. A good Marine equals a good dog, a substandard Marine equals a substandard dog.

The top factors leading to successful finds were the handler's knowledge of the dog's behavior and being tactically proficient, and employing the IDD within its capabilities.

IDD handlers have a huge responsibility deploying this CIED enabler, support from the battalion is necessary to maximize its effect. Marine handlers only have five weeks of training at K2SI (contracted trainer facilities) before going to enhanced mohave viper (EMV) for four weeks. Handlers receive at the most nine weeks of training with the IDD, the battalions have to make smart decisions on who can retain the training and apply it on deployment. Auburn University studies indicate a handler being away from the IDD can lose handler skills in thirty days, the IDDs can lose their skills in sixty days.<sup>xxxiv</sup> IDD teams used in conjunction with combat policing techniques and combat hunter skills make the system of systems methodology for CIED successful in Afghanistan.<sup>xxxv</sup>

The solution to this problem is easy; Marines must follow the guidelines laid out in the handout. However, in reality what are the chances the Marines that volunteer are right for the job, or the battalion is able to spare the Marine for five weeks during the work up cycle? Commanders with the IDD training might have the best intentions to pick a volunteer, but still have to place a Marine out of convenience in the handler position. If Marines are assigned to be handlers by the command involuntarily, there is a solution to ensure quality control. The IDD teams could be consolidated under the battalion executive officer (XO). Currently, IDD teams work in direct support of their respective companies giving the handler little time to join other patrols from different companies. In an effort to standardize IDD patrolling procedures among squads and to build credibility for the handlers, the IDD teams should be placed under the control of the battalion XO and assigned in general support to companies. Additionally, kennel supervisors (KSs) or senior IDD teams should act as a quality assurance representative joining an

IDD team on patrol, in order to correct IDD employment errors and further educate the Marines on IDD issues. In a high threat IED area, IDDs could be issued in a surge capacity if needed. This same idea could be accomplished at the Regimental level and is similar to MWD employment.

The battalion XO would act as an advocate for the IDDs, handlers and kennel supervisor (KSs). The KS will report to the XO with number of IED finds and IDD concerns or issues. AARs noted at times IDD handlers were unsuccessful relaying important information to the KS regarding the IDDs health or employment. The handler's chain-of-command in the Company made it difficult to speak to KS. Some companies did not allow the IDD teams to work from the front of the patrol; most patrols had the IDD handler remain toward the rear of the patrol, which resulted in reduced or no standoff distance. Having the handler report to the XO, will enable the handler to voice his concerns and ensure problems are being addressed. If battalions continue to have problems or feel that sourcing the IDD handlers is too burdensome, contracted handlers or handlers not organic to the unit could also be requested.

#### **Battalion Education:**

“Key leadership needs to go through an education piece on IDDs, to learn their capabilities and to maximize their effect in combat operations.”

- Frustrated handler after EMV IDD demo

“My unit emphasized the use of dogs in conjunction with every other enabler they had, they were very successful with the Ground Based Operational Surveillance System (GBOSS) and thermal images. If a unit wants to have a good IDD team than they need to have a good handler. Properly educating the commanders is the only way to ensure the right Marines are selected for this role.”

-GySgt Avendano, KS for 1st Battalion, 23rd Marines

The IDD 1.0 program has produced mixed results since its inception. There is not enough emphasis on training the commanders of the receiving units. Battalions have access to MCWLs X-files, the MCCDCs IDD Operational Handbook, and Marine Corps Engineer Course (MCEC) master learning file (MLF-8), which were produced to provide an easy-to-use reference that can be understood by all levels of command.<sup>2</sup> Yet, comments in AARs share a common theme, the need for education of the leaders from the squad to battalion level.

After action reports from 2011 illustrate that despite efforts to educate battalion leadership, information on the IDD is being overlooked. Commands expect a high quality product, but have not become fully involved in the program. The IDD teams' top concerns pertained to the lack of battalion leadership involvement regarding handler selection, collateral duties interfering with IDD responsibilities, lack of IDD integration training and poor reporting procedures.

Handler selection was sufficiently covered in the previous section; however, collateral duties are directly related to the selection process. After action reports show battalions are selecting Marines in low density military occupational specialties (MOSs). One senior handler

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<sup>2</sup> IDD program observations report in 2010 set forth best practices: Handlers should have handling and caring for their IDD as their primary billet. Handlers who were assigned other primary duties did not have time to adequately take care of and employ their IDD. Handlers must demonstrate initiative. Handlers must be volunteers. There is significant work involved with being an IDD handler in addition to being the member of a fire team. Even volunteers, however, should have some prior experience with dogs as pets and understand the effort involved with caring for their physical needs. Handlers must be fully proficient at their warfighting skills, understand tactics and be familiar with the unit TTPs. Selecting handlers with prior deployments to OIF/OEF is recommended. A letter of recommendation from Company leadership is desired.

was a MRAP mechanic; due to his MOS he was used to repair vehicles instead of working his IDD. In some cases standing duty conflicted with the handler's ability to conduct patrols or tend to the IDD.

The IDD program is continuing to grow and approval has been given by DC CD&I to produce up to 647 IDDs in supports of OEF.<sup>xxxvi</sup> This is not a transitory program. Currently, work is in progress developing IDD 2.0 which will update the IDD to better serve in Afghanistan.

The solution for this problem involves a holistic approach. The commanders should plan to make the IDD program a priority and integrate them with every patrol. Training for the patrols must begin whole-heartily in CONUS. In June 2011, LtCol Sullivan from 3rd CEB noted "I'd bear the burden of their [IDD] upkeep during the pre-deployment training program (PTP) in order to get more training with them and the opportunity to refine route reconnaissance and clearance (R2C) TTPs." CWO Fox, from 3rd Battalion, 1st Marines, stated "five weeks is not enough time for the handlers to learn how to use their dogs." Once EMV is complete the battalion has the option to retain control of the IDDs to conduct additional home station training, but the battalions will be responsible for the care, feeding, kenneling, and conditioning, maintenance training, and transportation of the IDDs.<sup>xxxvii</sup> The battalions need to be taught what options are available.

Is the IDD program working? Seventy-three percent of survey respondents agree that IDDs contribute to the patrols force protection. Seventy-two percent agree that this CIED enabler is needed to defeat or mitigate the IED threat.<sup>xxxviii</sup> Yet, according to AARs less than fifty percent of IED finds, made by IDDs, are being reported. For this program to continue to receive funding battalions must collect this vital data. Additionally, KSs need to maintain log books on each IDD to identify retraining needs, substandard dogs, and trends in enemy TTPs.

The request for this program was made almost eight years ago and we are still trying to educate Marines on the capabilities and limitations of the IDD program. The information is available but the battalions have to embrace this new CIED concept. In 2011, Afghan insurgents planted 14,661 IEDs, a sixty-two percent increase over 2009 and more than three times as many as the year before. All told, 268 U.S. troops were killed by IEDs, in 2010.<sup>xxxix</sup> Education affects handler selection, collateral duty assignments, training integration, and reporting practices.

### **Scent imprinting:**

“Without the scent kits to imprint the right odor in the IDD, we are sending Marines to a gunfight without any bullets.”

-SSgt Boswell 1st Battalion, 5th Marines

After action reports consistently revealed several problems which would be a challenge with any dog program: Lack of Field Service Representative (FSR) support, lack of veterinary services, lack of logistics planning, and inefficient odor imprinting.<sup>3</sup> Due to the scope of this

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<sup>3</sup> Making battalion education a priority will address many issues with the IDD program; however, some problems are enduring. Lack of FSR support, lack of IDD veterinary services to include first aid supplies and training, lack of logistics planning are additional problems with the program. FSRs are required to assist in training in CONUS and OCONUS. When in theater the FSRs are responsible for fixing IDDs, ensuring they work at their peak level. Joe Albuquerque a consultant for the IDD program reported in February 2011 that there are two FSRs at leatherneck handling all incoming on outgoing IDD teams. There is no way an FSR can be sent out to the battalion; the IDD team must be sent back to the rear which results in the handler being gone until the retraining is complete. Also, Veterinary support was not adequate, only one veterinarian and several veterinary technicians were available to service all in-country MWDs. There were no veterinarians or veterinary technicians in the battalion AO, which required teams to be transported to the rear for all treatment. Veterinary supplies were limited and no two first aid kits were alike. The IDD handlers used their own money to make quality first aid kits. Some of the necessary items



paper only odor imprinting will be covered since this is the most troubling problem. Currently, in Afghanistan the IDD's need to be trained on homemade explosives (HME).

After action reports comment on scent kit attainment in CONUS and OCONUS, and illustrate the lack of supplies and support. Marines participating in EMV were not provided scent kits or had to procure them through unconventional means. Also, when enemy TTPs were changing in theater, the IDD's training did not change to meet it. Once the battalion arrived in theater, they realized the IDD's had not been imprinted with the odors of the most prevalent threat. HME scent kits in theater were unavailable through Marine Corps sources and once the odors are acquired it could take up to two weeks to imprint the IDD's with them. This two week gap in capability will be evident by the scale of casualties suffered by the US. Sources of HME were acquired from US Army and British forces through back channels. This is dangerous since currently, it is illegal for anyone other than EOD personnel to make, handle, transport or bury HME.<sup>x1</sup>

One method of training which could mitigate the problem of not having the exact scent to train on is the process of "scent generalization." Training protocols are not being employed enabling the IDD to "scent generalize". "Once a dog is able to reliably identify a set of target odor signatures, it now has a reference "picture" to use as a template against which to compare an unfamiliar odor picture. This is referred to as generalization training. With patience and

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were salve for the pads of the IDD's feet and dog booties (shoes) for added protection. Logistically, IDD's tended to be overlooked when it comes to embarkation. RCT-7's AAR in November 2010 noted Units do not have a clear understanding of the embarkation requirements for MWDs. The arrival of IDD's into theater must coincide with the units arrival. Units need to identify IDD's as cargo and ensure handlers move with the dogs. Lastly, food is being improperly stored resulting in wet or moldy food. In one instance an IDD was fed MREs for five days until dog food could be obtained. IDD's are unable to work effectively if they are not on a proper diet.

rigorous attention to detail, it is possible to uniformly train explosive detection dogs to reliably recognize and indicate target odor signatures when these are present in either familiar or unfamiliar contexts.”<sup>xli</sup> As an example, “in the process of converting Calcium Ammonium Nitrate (CAN) for HME use, IED makers remove the limestone by some chemical means which may alter the odor profile of the final explosive mixture. As a result, dogs are presented with material whose overall odor picture may be unfamiliar to the K9 even though it may have been previously trained on the conventional AN component.”<sup>xlii</sup> An IDD trained in “scent generalization” would still recognize the scent picture of HME. The challenge is to teach the dog that he is not looking for one specific scent. An experiment with ten different concoctions of TNT showed once a dog was rewarded on three of the ten samples he would be able to recognize the common denominator between them. When shown the remaining seven samples the dogs would “alert”. The tipping point was the third odor.<sup>xliii</sup>

The IDD program is run by contractors who provide the IDDs, training, and basic resources; without revising the current contract, loopholes will exist allowing contractors to say “it’s not in the contract.” Plugging these holes will help solve problems associated with acquiring scent kits (HME). This outsourcing was intended to support rapid, adaptive changes to training protocols and methods in response to enemy countermeasures and in support of Marine Corps objectives.<sup>xliv</sup> Also, focusing on battalion education, turning to our sister services and allies for their expertise, and institutionalizing of the IDD program could reduce this problem.<sup>4</sup>

## **Conclusion:**

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<sup>4</sup> The Letort Papers, Improvised Explosive Devices in Iraq, 2003-2009: A case of Operational Surprise and Institutional Response. In this publication the director of Strategic Studies Institute noted a key conclusion from the analysis is the critical role of strategic leadership in recognizing the scale of surprise and forcing the necessary institutional response. At a time when budgets will not allow surprise to be addressed by maintaining large and technically diverse forces at high readiness, the ability to recognize and respond smartly to operational and strategic surprise may be critical requirement for a modern defense establishment.

“The warfighter feedback loop is an integral part of the ongoing effort to improve the IDD program, this type of data is used to adjust both IDD and IDD handler training. Surveying is one tool we use to assist in capturing this type of information. In essence, it has no boundaries and can reach all Marines that have been associated with the IDD Program in some way.”

- LtCol Kenneth Burger, PM IDD, Dec 2011

The IDD program was built on a solid foundation, but in order to ensure the programs’ longevity, changes need to take place. Dog selection, handler selection, battalion education and delays in imprinting IDD on HME are issues that plague the IDD program, without constant feedback the program will suffer. Institutionalizing this program, by making it a POR will ensure its future and enable the IDDs to be implemented as intended. The following recommendations are based on the analysis of battalion AARs from 2007 to 2011. Problem areas identified in 2007 showed little improvement by 2011. The IDD program manager (PM) is awaiting results from a survey released in December 2011, expect these same problems to resurface. To date, less than twenty surveys were completed. The end users are tired of reporting flaws in the program that are not getting resolved.

The first problem area concerns IDD dog selection. The IDD program needs to utilize the Belgium Malinois to solve the problems regarding IDDs being treated as pets and IDDs lacking stamina; two issues specific to the Labs. The Belgium Malinois has a proven track record as a MWD in other services and in similar capacity as an IDD in the IDF. These dogs are considered the best military canine throughout the world. The second problem area pertained to IDD handler selection. The battalion is ultimately responsible for choosing the handlers. In order for this program to excel the battalions need to take the time to choose handlers that are

qualified, regardless of a voluntary or involuntary selection process. If battalion commanders fail to see the long-term impact of this decision, battalions may request contracted handlers for patrols; despite past battalion concerns pertaining to non-infantry MWD handlers becoming a liability. To ensure oversight of the IDD program the KS and IDD handlers should fall under the battalion XO and work in GS of the companies.

Educating battalion leadership has been a problem since the program's inception. The battalions see the benefit of the program, they just need to get into the operational handbook and take the time to understand the capabilities and limitations of the dogs. The battalion leadership needs to be an advocate for the IDD program, its handlers, and KSs. Currently, tremendous individual effort by KSs and resourceful IDD handlers are ensuring the program's success. Battalion leadership must ensure feedback is pushed to the IDD program manager. IEDs are going to endure as an insurgent TTP, and dogs are the most effective tool to detect them. The USMC needs to know how to improve the program. Battalions providing innovative recommendations based on experiences with IDD teams is a necessity, this IDD program and Marines deploying in theater depend on this concept.

Lastly, the most vital issue to address is the need for proper scent kits to imprint the IDs. As SSgt Boswell mentioned, "Without the scent kits to imprint the right odor in the IDs, we are sending Marines to a gunfight without any bullets." One method to overcome this issue would be to use "scent generalization" training protocols to paint a scent picture for the ID. The goal would be to train the IDs to reliably recognize and indicate target odor signatures when present in either familiar or unfamiliar contexts.<sup>xlv</sup> Obtaining actual HME would be preferred but is hard to acquire due to legal issues, plus enemy TTPs change. An ID will only

find what it is trained to find; therefore, the HME imprinting problem is a top priority for IDD 2.0.

Insurgents emplaced over 14,000 IEDs in 2010, the dogs nose and vigilant Marines trained in combat hunter and combat policing techniques were used to mitigate the IED threat. It is imperative Marines understand the IDD program and integrate it into training as early as possible. The IED threat is enduring; the IDD program should endure as well.

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<sup>i</sup> Michael G. Lemish, *War Dogs: Canines in Combat* (Washington: Brassey's, 1996), 258.

<sup>ii</sup> Fairfax Downey, *Dogs for Defense: American dogs in the Second World War 1941-1945* (New York, 1955), 8.

<sup>iii</sup> Michael G. Lemish, xii.

<sup>iv</sup> Marine Corps Warfighting Laboratory (MCWL), "Concept of employment and outline for way ahead for the expanded use of working dogs in USMC"(working paper, Jan. 2009), 1.

<sup>v</sup> Michael G. Lemish, 244.

<sup>vi</sup> Michael G. Lemish, 94.

<sup>vii</sup> Michael G. Lemish, 97.

<sup>viii</sup> Michael G. Lemish, 198.

<sup>ix</sup> Michael G. Lemish, 199.

<sup>x</sup> Michael G. Lemish, 232-234.

<sup>xi</sup> Marine Corps Warfighting Laboratory (MCWL), "Concept of employment and outline for way ahead for the expanded use of working dogs in USMC"(working paper, Jan. 2009), 1.

<sup>xii</sup> Miles Amore , "Taliban fighters being taught at secret camps in Iran," *Sunday London Times*, March 21, 2010, <http://defense-technologynews.blogspot.com/2010/03/dtn-news-taliban-fighters-being-taught.html> (accesses January 20, 2012).

<sup>xiii</sup> Tim Albone. "Iran gives Taliban hi-tech weapons to fight British," *Sunday London Times*, August 5, 2007, <http://www.militaryphotos.net/forums/showthread.php?117556-Iran-gives-Taliban-hi-tech-weapons-to-fight-British> (accessed January 20, 2012).

<sup>xiv</sup> U.S. Department of Defense, Joint Improvised Explosive Device Defeat Organization (JIEDDO), Directive 2000.19E, February 14, 2006, 2.

<sup>xv</sup> Craig Whitlock, "Number of U.S. casualties from roadside bombs in Afghanistan skyrocketed from 2009 to 2010," *Washington Post*, January 25, 2011, [http://www.washingtonpost.com/world/number-of-us-casualties-from-roadside-bombs-in-afghanistan-skyrocketed-from-2009-to-2010/2011/01/25/ABPuhFR\\_story.html](http://www.washingtonpost.com/world/number-of-us-casualties-from-roadside-bombs-in-afghanistan-skyrocketed-from-2009-to-2010/2011/01/25/ABPuhFR_story.html) (accessed January 20, 2012).

<sup>xvi</sup> Lisa Albuquerque, "Top Dog Demonstration 2012," Office of Naval Research , Naval Expeditionary Dog Program , January 18, 2012, 9.

<sup>xvii</sup> Craig Whitlock, "Number of U.S. casualties from roadside bombs in Afghanistan skyrocketed from 2009 to 2010," *Washington Post*, January 25, 2011, [http://www.washingtonpost.com/world/number-of-us-casualties-from-roadside-bombs-in-afghanistan-skyrocketed-from-2009-to-2010/2011/01/25/ABPuhFR\\_story.html](http://www.washingtonpost.com/world/number-of-us-casualties-from-roadside-bombs-in-afghanistan-skyrocketed-from-2009-to-2010/2011/01/25/ABPuhFR_story.html) (accessed January 20, 2012).

<sup>xviii</sup> Lisa Albuquerque, "Use of Improvised Explosive Device Detector Dogs by 3/6 at Mojave Viper Exercise," Potomac Institute of Policy Studies, November 2006, 3.

<sup>xix</sup> DC CD&I, Urgent Universal Needs Statement (UUNS) 07129UA.

<sup>xx</sup> DC CD&I, Urgent Universal Needs Statement (UUNS) 07129UA.

<sup>xxi</sup> Marine Corps Combat Development Center (MCCDC), IED Detector Dog (IDD) Operational Handbook, January 31, 2011, 3.

<sup>xxii</sup> Lisa Albuquerque, "Top Dog Demonstration 2012," Office of Naval Research , Naval Expeditionary Dog Program , January 18, 2012, 5.

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- <sup>xxiv</sup> Marine Corps Combat Development Center (MCCDC), IED Detector Dog (IDD) Operational Handbook, January 31, 2011, 1.
- <sup>xxv</sup> Lisa Albuquerque, "Top Dog Demonstration 2012," Office of Naval Research , Naval Expeditionary Dog Program , January 18, 2012, 7.
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- <sup>xxxiii</sup> Lisa Albuquerque, "Top Dog Demonstration 2012," Office of Naval Research , Naval Expeditionary Dog Program , January 18, 2012, 7.
- <sup>xxxiv</sup> U.S. Army. "Army review of USMC IDD Program and Recommendation for an Off-Leash IED Detection Capability"(presentation September 1, 2010).
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- <sup>xxxvii</sup> Marine Corps Combat Development Center (MCCDC), IED Detector Dog (IDD) Operational Handbook, January 31, 2011, 21-22.
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Ammonium Nitrate Used For HME – Smuggled in via Pakistan in truck convoys – Urea sold locally – Ammonium Nitrate put inside Urea Nitrate bags and Resealed



CONTAINERS FOR IEDs

## Sangin Marketplace – June 2011

### Appliance Store Owner Selling New Washing Machine Timers



IEDs





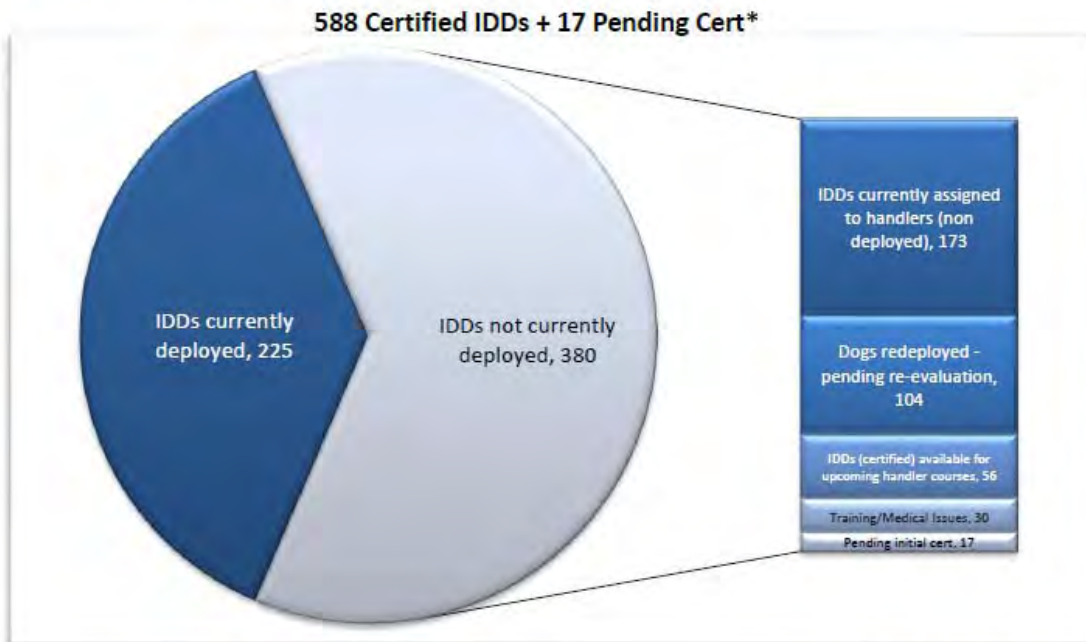
USMC IDD



BRITISH IDD

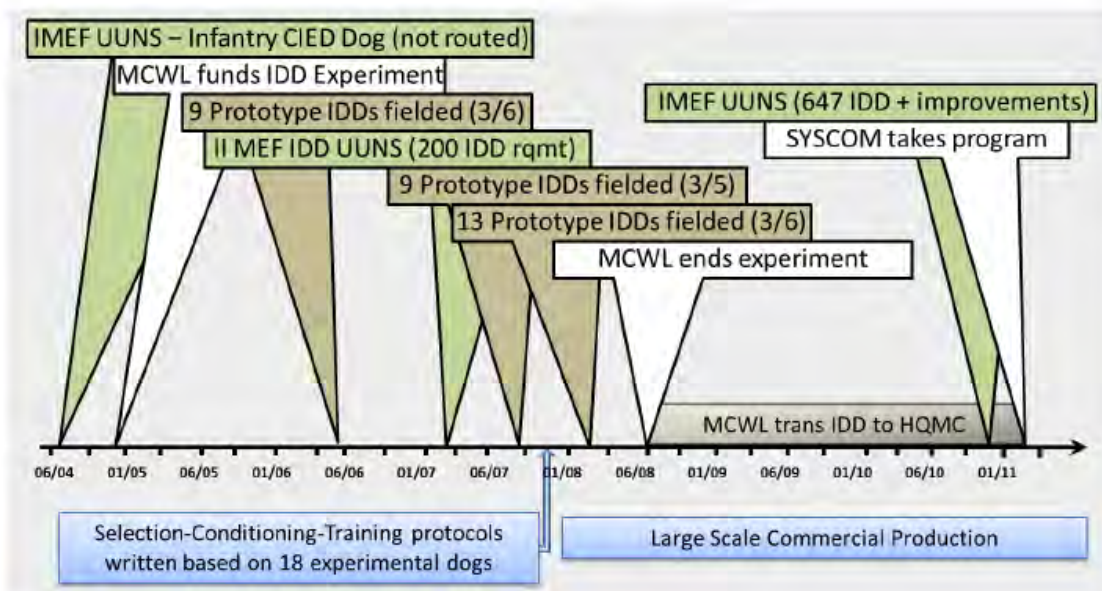
ALL tables are located in the "Top Dog Demonstration 2012", Office of Naval Research, Naval Expeditionary Dog Program, January 18, 2012.

## Current IDD Stats



\*As of 29 December 2011

## Timeline for IDD 1.0



## Current IDD Capability Deficiencies

ONR is currently conducting a deep dive of the IDD program, compiling and analyzing all relevant after action reports, MCOTEA Assessment, and G3 theater assessments. It quickly became apparent that many of the same themes have been consistently reported throughout Operation Iraqi Freedom and Operation Enduring Freedom.



Overall, the AARs say that IDDs are working and useful. A recent theater survey (IDD handlers to BN CDRs) said 72% agreed or strongly agreed with "The IDD Team is an important part of the family of C-IED systems and TTPs required to defeat or mitigate the IED threat." There were other dog-specific issues raised in the AARs, but the prevailing themes identified above persisted throughout OIF and OEF. Research experiments in IDD 2.0 will specifically address each of these four deficiencies.